
II. On *Cyrtandraceæ*, a new Natural Order of Plants. By William Jack, M.D. Communicated by Aylmer Bourke Lambert, Esq. F.R.S. V.P.L.S.

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IN examining some of the numerous Sumatran species of *Cyrtandra*, I was lately led to observe the great inaccuracy of Forster's description and figure of the fruit, which has been the cause of deception in regard to its natural affinities. His error consists in representing the septum as complete, with adnate placentæ similar to what obtains in some genera belonging to *Scrophularinæ*; whereas, in reality, it is bipartite through the axis of the fruit, and the placentæ are no other than the revolute lobes of the septa. This peculiar structure is more distinct in the nearly related genus of *Didymocarpus* (*Mal. Misc. vol. i.*), which has capsular fruit, and where the lobes of the contrary dissepiment so completely bipart the cells as to give it the appearance of being quadrilocular. It is obvious that this character is totally inconsistent with that of *Scrophularinæ*, and it does not accord exactly with any of the Jussiean orders. *Didymocarpus* is related to *Bignoniaceæ* through *Incarvillea*, but is not admissible into that family as defined by Mr. Brown in his *Prod. Fl. Nov. Holl.* I am therefore inclined to think that *Cyrtandra*, *Didymocarpus*, and another genus, which I shall here present under the name of *Loxonia*, which agree remarkably in general habit as well as in carpological structure, may properly form a small
and

and distinct family near to *Bignoniaceæ*. The two first genera are numerous in the Malay islands; and I may remark that, as far as my present observations extend, the *Cyrtandræ* appear to prevail principally to the south of the Equator, and the *Didymocarpi* on the north, where it has even been found, according to the observations of Dr. Wallich, to extend to the alpine regions of Nepal. I shall proceed to give the characters by which this family and its genera are distinguished, and shall add descriptions of all the species that I have as yet had an opportunity of examining.

CYRTANDRACEÆ.

Calyx monophyllus, divisus.

Corolla monopetala, hypogyna, sæpius irregularis, 5-loba.

Stamina. *Filamenta* 4, duo plerumque, nunc quatuor antherifera. *Antheræ* biloculares, per paria connexæ.

Ovarium disco glanduloso cinctum, biloculare vel pseudo-4-loculare, polysporum. *Stylus* simplex. *Stigma* bilamellosum v. bilobum.

Capsula v. *Bacca* bilocularis, bivalvis, polysperma. *Dissepimenta* contraria, biloba, lobis revolutis seminiferis, loculos bipartientibus (inde pseudo-4-locularis). *Semina* nuda.

Herbæ vel suffrutices. *Folia* simplicia, plerumque opposita, altero sæpe abortivo aut nano, exstipulata. *Inflorescentia* axillaris.

In this family the flowers nearly resemble those of the *Bignoniaceæ*, but have most frequently only two fertile stamina, and rarely exhibit any trace of a fifth. In fruit they are abundantly distinct; and the herbaceous stems, simple leaves, and axillary inflorescence, form important and striking differences of habit.

CYRTANDRA,

CYRTANDRA, Forst.

Calyx quinquepartitus. *Corolla* infundibuliformis, ad faucem ampliatus, limbo quinquelobo subirregulari, rarius bilabiato. *Stamina* quatuor, quorum duo antherifera. *Bacca* oblonga, calyce longior; dissepimenti lobis per totam superficiem seminiferis. *Semina* nuda, sæpe foveolata v. punctata.

Folia opposita, altero plerumque abortivo aut nano. *Flores* sæpissime capitati involucrati.

* Herbaceæ corollâ subirregulari.

1. CYRTANDRA MACROPHYLLA.

TAB. II. Fig. 1. a—g.

C. foliis subrotundo-ovatis serratis glabris, involucro monophyllo, pedunculis petiolo brevioribus.

Selabang. *Malay*.

Native of the interior of Sumatra.

Suberect. *Branches* thick, four-sided, with rounded angles, and two opposite sides deeply furrowed. *Leaves* apparently alternate, but in reality opposite, the petioles springing from the joints of the stem, perfect on one side, but abortive on the other, forming nothing more than a short ligula without a leaf; subrotund-ovate, acute, serrated with rounded blunt serratures, smooth on both sides, dark-green above, whitish beneath, with strongly prominent nerves: a foot in length by about nine inches broad. *Petioles* eight or nine inches long, thick, embracing the stem at the joint, and uniting with the base of the opposite petiole, which is only one or two inches long, and tapers into a point without ever expanding into a leaf. *Peduncles* opposite, from the axils both of the perfect and abortive petioles, slender, not

so long as the petiole, supporting a round dense head of flowers, which is embraced at the base by a monophyllous, three- or four-parted involucre, and by several large bracts within it. *Flowers* white, numerous, nearly sessile, aggregated into a round head. *Calyx* tubular, somewhat woolly, divided at the mouth into five linear segments, generally more deeply cloven on one side. *Corolla* infundibuliform, much longer than the calyx, expanding at the mouth; *limb* divided into five rather unequal lobes. *Stamina* two, shorter than the corolla, and inserted on its tube, joined by their anthers; the rudiments of two abortive stamina. *Anthers* of two parallel lobes, which are woolly at their base. *Ovary* embraced at the base by a nectarial ring, long, two-celled; cells bipartite by the revolute lobes of the dissepiments. *Style* as long as the stamina. *Stigma* infundibuliform. *Berry* oblong, somewhat curved, cylindrical, acuminate, two-celled, many-seeded; seeds arranged round the revolute lobes of the septa, small, roundish.

2. CYRTANDRA MACULATA.

C. foliis subrotundo-cordatis acutis serratis supra glabris, corollæ lobis tribus inferioribus maculâ purpureâ.
Sumatra.

A low herbaceous plant. *Leaves* opposite, one abortive, the other petiolate, round-cordate, acute, serrated, smooth above, somewhat villous beneath; about four inches long, by four and a half broad. *Flowers* capitate, involucred, axillary. *Calyx* tubular, five-toothed. *Corolla* much longer than the calyx, white, with a large purple spot on each of the three lower lobes; *limb* five-lobed, sub-irregular. *Stamina* two fertile, two sterile. *Style* one. *Berry* oblong, many-

many-seeded, seeds disposed round the lobes of the dissepiment.

3. *CYRTANDRA BICOLOR.*

C. foliis elliptico-lanceolatis basi cordatis supra glabris, subtus villosis purpureis, pedunculis petiolo brevioribus.

Sumatra.

Stem herbaceous, sub-erect. *Leaves* opposite, long-petioled, one of the petioles generally abortive, elliptic-lanceolate, cordate and rounded at the base, acute, edges revolute, smooth and dark-green above, purple, villous, and very soft beneath; nine or ten inches long. *Petioles* about the same length as the leaves. *Peduncles* axillary, reflexed, about two inches long, bearing a head of from six to ten pedicellate flowers, embraced by a short deciduous involucre. *Calyx* tubular, quinquefid. *Corolla* white, large; *limb* sub-irregular, five-lobed. *Stamina* two, with two abortive filaments. *Style* one. *Berry*, oblong, many-seeded; lobes of the dissepiments seminiferous.

4. *CYRTANDRA HIRSUTA.*

C. foliis elliptico-ovatis basi cordatis crenatis utrinque pilosis, capitulis paucifloris hirsutis, involucre bipartito.

Sumatra.

Herbaceous, ascending, pilose. *Stem* round. *Leaves* opposite, one of them generally abortive, and hence apparently alternate, long-petioled, round-oval, or elliptic-ovate, cordate at the base, rather obtuse, crenate, pilose with remote erect hairs; about five inches long and three broad. *Petioles* round, as long as the leaves, embracing the stem at the joints, and uniting with the base of the opposite one, which

is generally an abortive leafless stalk of an inch in length. *Peduncles* axillary, reflexed, villous, shorter than the petioles, supporting a head of from two to five flowers, invested by an involucre composed of two opposite ovate leaflets united at the base. *Calyx* tubular, hirsute with brown hairs; quinquefid. *Corolla* white, pilose without, much longer than the calyx; *tube* curved, expanding into a large infundibular mouth; *limb* five-parted, somewhat two-lipped; *segments* nearly equal. *Stamina* two fertile, shorter than the corolla; two abortive rudiments. *Anthers* connate. *Style* about the length of the stamina. *Stigma* thick, depressed, and transverse. *Ovary* surrounded by a nectarial ring, long, two-celled; *cells* bipartite by the revolute lobes of the dissepiment, to which the seeds are attached all round.

5. CYRTANDRA GLABRA.

C. foliis lato-ovatis serratis glabris, capitulis breve-pedunculatis, involucre monophyllo.

Interior of Bencoolen.

Herbaceous. *Leaves* alternate from the abortion of the opposite petiole, rather long-petioled, broad-ovate, acuminate, rather acute at the base, serrated, smooth; about seven inches long by five broad. *Peduncles* axillary, short, supporting a head of large white flowers. *Involucre* monophyllous, closely embracing the flowers. *Calyx* five-cleft. *Corolla* much longer than the calyx, expanding into a wide funnel-shaped faux; *limb* five-parted, nearly equal. *Stamina* two, conniving, shorter than the corolla; the rudiments of two others. *Anthers* united. *Style* longer than the stamina. *Stigma* dilated, sub-bilabiate. *Berry* as in the genus.

6. CYRTANDRA

6. CYRTANDRA INCOMPTA.

C. hirsuta, foliis elliptico-ovatis serratis, floribus capitatis hirsutis, involucreo diphylo.

Langkabang. Malay.

Native of Sumatra.

Herbaceous, erect, shaggy with brown hair. *Leaves* alternate from the abortion of the opposite leaf, of which there is sometimes a rudiment observable, long-petioled, elliptic-ovate, acute, serrated, villous; six inches long. *Petioles* about three inches long, densely villous with brown hair. *Peduncles* axillary, solitary, shorter than the petioles, bearing a small compact head of sessile flowers, the whole densely woolly. *Involucre* of two ovate, acute leaflets. *Calyx* tubular, covered with brown wool, quinquefid. *Corolla* villous without, infundibuliform; *limb* five-parted, nearly equal. *Stamina* two, conniving, joined by their anthers. *Anthers* with erect parallel lobes. *Ovary* embraced by a nectarial ring. *Style* one. *Berry* as in the genus. *Seeds* foveolate.

This plant is remarkable for the shaginess of all its parts.

7. CYRTANDRA AUREA.

C. foliis oppositis subrotundo-ovatis acuminatis serratis sericeo-pilosis, capitulis densis subsessilibus.

At the foot of Gunong Bunko, interior of Bencoolen.

A large strong erect species; *stem* thick, four-sided, with rounded angles, pilose with appressed hairs. *Leaves* opposite, both perfect, long-petioled, subrotund-ovate, very large, acuminate, serrate, sericeously pilose, particularly on the under surface. *Heads* axillary, sub-sessile, densely many-flowered.

flowered. *Involucre* closely investing the head, and nearly as long as the flowers. *Flowers* yellow. *Calyx* tubular, angled, nearly as long as the tube of the corolla. *Corolla* sub-campanulate; *limb* nearly equal, five-lobed. *Stamina* two, with two sterile filaments. *Style* one. *Stigma* bilabiate. *Berry* oblong, two-celled, many-seeded, as in the genus.

OBS. The yellow colour of the flowers is an unusual occurrence in this family; white is almost without exception the prevailing colour.

8. CYRTANDRA PELTATA.

C. foliis peltatis ovatis acuminatis.
Sumatra.

Stem ascending, round, smooth. *Leaves* long-petioled, the opposite petiole abortive, peltate, ovate, rounded at the base, acuminate above, obtusely serrate, smooth, paler beneath, eight or ten inches long. *Heads* axillary, very short-peduncled, involucred. *Calyx* five-cleft. *Corolla* white, infundibular; *limb* five-lobed, sub-irregular. *Stamina* two, sterile filaments two. *Ovary* embraced by a nectarial ring. *Style* one. *Berry* oblong, many-seeded, as in the genus.

9. CYRTANDRA CARNOSA.

C. foliis lanceolato-oblongis basi obliquis carnosis oppositis, altero minimo subrotundo.

Creeping or scandent, obscurely four-sided, smooth. *Leaves* opposite, unequal; the one lanceolate-oblong, oblique at the base, entire, thick, fleshy, veinless, smooth above, tomentose beneath, about seven or eight inches long; the other small, cordate, subrotund, acuminate. *Heads* axillary,

lary, short-peduncled, three- to seven-flowered. *Involucre* of two ovate acuminate leaflets. *Flowers* white, very short-pedicelled. *Calyx* short, five-toothed. *Corolla* much longer than the calyx, infundibular; *limb* five-lobed, nearly equal. *Stamina* two fertile, shorter than the corolla; *filaments* curved, broader above; two sterile; *lobes* of the anthers slightly unequal. *Style* simple. *Stigma* dilated. *Berry* two-celled, many-seeded; placentation as in the genus.

** Frutescentes, corollâ bilabiâtâ.

10. CYRTANDRA FRUTESCENS.

C. erecta, foliis oppositis lanceolatis serratis glabris, pedunculis axillaribus trifloris.

Suffrutescent, erect. *Leaves* opposite, petiolate, broad-lanceolate, acuminate, serrate, smooth; seven to nine inches long. *Peduncles* axillary, generally three-flowered, not so long as the petioles. *Bracts* linear, at the base of the pedicels. *Calyx* five-parted; *segments* subulate, erect. *Corolla* purplish, bilabiate, the lower lip longer, three-lobed; *lobes* very shallow. *Stamina* two fertile, two sterile. *Stigma* dilated, sub-bilabiate. *Berry* cylindrical, longer than in the other species, two-celled; *lobes* of the septa revolute, biparting the cells, and seminiferous on their whole surface. *Seeds* naked.

Obs. This species and the following differ considerably in habit from the other *Cyrtandra*, and have more resemblance to *Didymocarpus frutescens*; from which, however, they are distinguished by their baccate fruit, and by the insertion of the seeds upon the whole surface of the lobes of the dissepiment; while in *Didymocarpus* they are attached only to the edge. These species might perhaps be separated from

Cyrtandra

Cyrtandra on account of their bilabiate corolla and longer fruit.

11. CYRTANDRA RUBIGINOSA.

C. erecta, foliis obovato-lanceolatis serratis, pedunculis axillaribus fasciculatis unifloris, cum calycibus viscoso-pilosis.

Frutescent, erect. *Stem* obsoletely four-angled, the young parts bristly. *Leaves* opposite, petiolate, obovate-lanceolate, acuminate, acutely serrate, smooth, the nerves pilose on the lower surface. *Peduncles* several, axillary or below the leaves, generally one-flowered, shorter than the petioles, covered with viscous hairs. *Bracts* linear, acute. *Calyx* tubular, pilose, like the peduncles, with greenish viscous hairs, five-parted; *segments* linear. *Corolla* of a dusky purplish colour, pilose without, bilabiate, the lower lip longer, divided into three small shallow lobes; upper lip bifid. *Stamina* two fertile, two sterile; *filaments* broader above. *Style* one. *Stigma* obtusely two-lipped. *Berry* cylindrical, many-seeded; placentation as in the genus.

DIDYMOCARPUS. Wallich.

Calyx 5-fidus. *Corolla* infundibuliformis, limbo quinquelobo, subirregulari, rarius bilabiato. *Stamina* 4, rarissime 5, quorum duo nunc quatuor antherifera. *Capsula* siliquæformis, pseudo-quadrilocularis, bivalvis, hinc dehiscens; dissepimenti contrarii lobis valvulis parallelis iis denique æmulis (ideoque fructum bicapsularem mentientibus) marginè involuto seminiferis. *Semina* nuda pendula.

Folia

Folia simplicia opposita, raro alterna, æqualia, floribus axillaribus pedunculatis vel racemosis.

1. DIDYMOCARPUS CRINITA. *Malay Miscell. vol. i.*

TAB. II. Fig. 2. a—i.

D. erecta, foliis alternis longis spathulatis acutis serratis pilosis subtus rubris, pedunculis 2—5 axillaribus unifloris basi cum petiolis coeuntibus.

Timmu. *Malay.*

In the forests of Pulo Penang.

Root long and tapering. *Stem* short, erect, thick, rough beneath, with the vestiges of fallen leaves. The whole plant is covered with hairs. *Leaves* alternate, crowded, sub-sessile, long, spatulate, nine to ten inches in length, acute, obtuse at the base, serrated, rugose, hairy, brownish-green above, purplish-red beneath; middle nerve strong and thick, forming a short petiole at the base. *Stipules* none. *Peduncles* two to five in each axil, one-flowered, round, two inches long, uniting at the base into a short thick unilateral rachis, densely pilose, and adhering beneath to the petiole. *Bracts* linear, two, alternate on each peduncle. *Calyx* five-parted, hairy, reddish; laciniae erect, linear, acute, the upper one smaller. *Corolla* white, tinged with purple externally, much longer than the calyx, infundibuliform; *tube* somewhat gibbous at the base, incurved, expanding above; *limb* sub-bilabiate; upper lip two-lobed; lower three-lobed, larger, internally streaked with yellow; all the segments roundish, obtuse, not very unequal. *Stamina* inserted within the tube, two fertile, with the rudiments of two abortive ones, the former scarcely so long as the corolla, conniving at their summits. *Anthers* composed of two divaricate transverse lobes.

lobes. *Ovarium* linear, surrounded at the base with a white tubular entire nectarial ring or cup, and produced into a tomentose style of the same length as the stamina. *Stigma* obtuse, truncate. *Capsule* long, linear, silique-shaped, cylindrical, acute, somewhat tomentose, one to two inches long, two-valved, two-celled; dissepiments contrary, with two lobes, which are parallel to the valves, revolute and seed-bearing at their margins, and parting the cells in such a manner as to give the appearance of a four-celled siliqua. *Seeds* numerous, naked, small, and subrotund.

Obs. The deep-red colour of the lower surface of the leaves, and the crested disposition of the flowers in their axils, render this a very remarkable species. The æstivation is imbricate, the two lateral lobes of the lower lip being the outermost.

2. DIDYMOCARPUS RACEMOSA.

D. foliis oppositis lanceolatis utrinque attenuatis duplicato-serratis supra glabris, pedunculis axillaribus plerumque bifidis, floribus racemosis, pedicellis binatis.

At Tappanooly, on the west coast of Sumatra.

Stem short, erect, simple, rough with the vestiges of old leaves. *Leaves* crowded, opposite, sub-petiolate, spreading, about nine inches long, narrow-lanceolate, attenuated towards both ends, duplicato-serrate, strongly nerved; upper surface smooth, with the exception of the middle rib, which is furnished with long hairs; all the nerves of the under surface pilose. *Petioles* short, embracing the stem; densely pilose above. *Peduncles* axillary, generally solitary, erect, shorter than the leaves, covered with purple glandular hairs; generally dividing into two racemes, composed of many pedicellate flowers arranged in pairs. *Bracts* lanceolate, acuminate,

minate, serrate, ciliated. *Flowers* white, as in the genus. *Calyx* five-parted, erect, reddish, hairy. *Capsules* linear, straight, generally deflexed, nearly cylindrical, rough with short erect hairs, pseudo-quadrilocular. *Seeds* naked.

Obs. This species has great resemblance in general habit and in the form of the leaves to the preceding, but differs widely in the inflorescence, which is here very peculiar. The peduncles divide into two branches of equal length, on each of which the flowers are arranged by pairs, forming two racemes supported by a common peduncle.

3. DIDYMOCARPUS REPTANS. *Mal. Misc. vol. i.*

D. prostrata reptans, foliis petiolatis ellipticis crenulatis, pedunculis 1—3 axillaribus unifloris, staminibus duobus fertilibus.

Timmu Kichil. *Malay.*

Found in the forests of Pulo Penang with the preceding.

Stem prostrate, round; villous, striking root at every joint, often a foot in length. *Leaves* lying flat, opposite, petiolate, oblong-oval or elliptic, rather obtuse, sometimes slightly cordate at the base, slightly crenate, covered with white hairs, green above, paler and sometimes reddish beneath. *Petioles* villous. *Peduncles* one to three, axillary, one-flowered, erect, as long as the leaves, pilose, furnished with two bracts near the summit. *Calyx* five-parted, with erect acute laciniae, the uppermost smaller. *Corolla* white, infundibuliform, sub-irregular, similar to that of *D. crinita*, but smaller as well as the whole plant. *Stamina* two fertile, conniving above, two sterile. *Anthers* approximate, reniform, two-celled. *Nectary* surrounding the base of the ovarium, obsoletely five-toothed at the margin. *Style* equal

to the stamina. *Stigma* simple. *Capsule* long, straight, silique-shaped, pseudo-quadrilocular, as in the genus. *Seeds* numerous, naked.

4. DIDYMOCARPUS CORNICULATA. *Mal. Misc. vol. i.*

D. erecta, foliis alternis obovatis acuminatis serratis, floribus fastigiatis secundis, pedunculo axillari elongato.

Found at Tappanooly in Sumatra.

The *stem* is nearly erect, from one to two feet in height, herbaceous or somewhat shrubby, villous. *Leaves* alternate, petiolate, obovate, acuminate, narrowing to the base, serrated, pilose above, villous below. *Peduncles* axillary, solitary, elongated, bearing several dense fascicles of flowers, all turned to one side, depressed or bent at an angle to the peduncle, and spreading in a kind of half-circle, somewhat in the manner of the *Lotus corniculatus*. *Flowers* many, white; *pedicels* articulate below the calyx, covered as well as the calyx with glandular hairs. *Bracts* linear, acute. *Calyx* five-parted; *segments* linear. *Corolla* white, much longer than the calyx, infundibuliform, wide at the faux; *limb* somewhat oblique, bilabiate, the lower lip longer, three-lobed. *Stamina* two fertile, connected above by their anthers, whose lobes are transverse. *Style* as long as the stamina. *Stigma* capitate. *Capsule* silique-shaped, two-celled; *cells* bipartite (as if four-locular), two-valved, generally bursting at one side, many-seeded. *Seeds* naked.

The disposition of the flowers and fruit is peculiar, the capsules spreading horizontally like radii in a sort of semicircle, of which the peduncle is the axis.

5. DIDYMOCARPUS

5. DIDYMOCARPUS ELONGATA.

D. herbacea erectiuscula didynama, foliis oppositis ovatis utrinque acutis serratis, spicis axillaribus secundis, pedicellis binatis remotis, corollâ elongatâ.

Found on Pulo Bintangor, an island lying off the west coast of Sumatra.

A small erect herbaceous plant, about half a foot high, pilose.

Leaves opposite, petiolate, about five inches long, ovate, acute at both ends, serrated, papillous, and pilose with rather long hairs above, villous beneath with short hairs.

Petioles channelled above, and ciliate along the edges of the furrow. *Stipules* none. *Peduncles* axillary, solitary, bearing a unilateral spike rather longer than the leaf. *Pedicels*

in pairs, each pair rather remote. *Bracts* linear, at the base of the pedicels. *Calyx* five-cleft; *laciniæ* linear, acute, erect, tomentose, as well as the whole spike. *Corolla* tubular, somewhat curved, white, with a purplish tinge, slightly tomentose without, bilabiate; upper lip two-lobed; lower

rather elongated, three-lobed. *Stamina* four, didynamous, each pair connected by their anthers. *Anthers* two-lobed, reniform. *Style* shorter than the stamina. *Stigma* thickened, emarginate. *Capsule* long, silique-shaped, pointed, two-valved, two-celled; *cells* bipartite (pseudo-quadrilocular):

seeds attached to the revolute edges of the placentæ, which form the pseudo-partitions of the cells, numerous, small, not winged.

OBS. The remotely flowered secund spikes, and the nearly tubular corolla with elongated lower lip, distinguish this from all its congeners.

6. DIDYMOCARPUS

6. DIDYMOCARPUS BARBATA.

D. fruticosa, foliis oppositis ovatis subinæquilateralibus hirsutis, pedunculis gracilibus axillaribus fasciculatis 2—6-floris, staminibus quatuor apice barbatis: duobus sterilibus, calyce infundibuliformi.

Native of Sumatra.

Fruticose, erect, the older branches round, the younger somewhat compressed and furrowed on two opposite sides, scabrous. *Leaves* opposite, petiolate, ovate, somewhat inequilateral at the base, acuminate, entire, covered with bristly hairs above, each inserted on a small papilla or gland, villous beneath, with prominent nerves; about four inches long. *Petioles* about half an inch long. *Peduncles* axillary, fascicled, long and slender, smooth, forming an ascending curve, bifid or trifid, sometimes again divided, so as to be dichotomous, 2—6-flowered. At each division of the peduncle is situated a funnel-shaped bracteal cup, apparently composed of two opposite bracts united nearly their whole length. In the axillæ, at the base of the peduncles, the bracts are distinct and woolly. *Calyx* infundibuliform, persistent, smooth; *mouth* quinquefid. *Corolla* much longer than the calyx, infundibuliform; *limb* five-parted; *laciniæ* subrotund, nearly equal. *Stamina* four, of which two only are fertile and connected together by their anthers; the filaments of both are furnished at the summit with a tuft of wool. *Anthers* with transverse lobes. *Style* nearly as long as the fertile stamina. *Stigma* sub-lobate. The base of the ovary is surrounded by a nectarial ring, as in the genus. *Capsule* silique-shaped, four-furrowed, long, somewhat arcuate, pseudo-quadrilocular, many-seeded.

Seeds

Seeds naked, elongated, pendulous, inserted on the involute margin of the lobes of the dissepiment.

Obs. The pseudo-quadrilocular structure of the capsule is here remarkably distinct; it is a well-marked handsome species, having numerous flowers supported on long slender ascending peduncles.

7. DIDYMOCARPUS FRUTESCENS. *Mal. Misc. vol. i.*

D. caule suffrutescente erecto, foliis oppositis longe petiolatis ovato-lanceolatis utrinque attenuatis supra glabris subtus canescentibus, floribus axillaribus fasciculatis didynamis.

Native of Pulo Penang.

Stem generally simple, suffrutescent, densely covered with ferruginous appressed scales or chaffy hairs. *Leaves* opposite, long-petioled, ovate-lanceolate, acuminate, attenuated to the base, slightly serrated, eight or ten inches long, smooth above, hoary and tomentose beneath, with appressed hairs. *Petioles* three inches long, furrowed above, thickened at the base, villous. *Stipules* none. *Peduncles* axillary, fascicled, one- to three-flowered, shorter than the petioles, purplish. *Bracts* lanceolate acute. *Calyx* tomentose, with glandular hairs, tubular, five-parted; *laciniæ* linear, spreading above. *Corolla* white, tomentose without like the calyx, infundibuliform, incurved, all the laciniæ subrotund, obtuse. *Stamina* four, didynamous, arcuate, approximate at their summits, each pair connected by their anthers. The filaments of the upper pair are thickened below their middle. *Anthers* white, adnate to the filaments, consisting of two lobes nearly parallel. *Style* of the length of the stamina. *Stigma* truncate. *Capsule* long, linear, silique-shaped, two-valved, two-celled; *cells* two-parted by the septiform lobes
of

of the dissepiment, which are revolute and seminiferous at their margins. *Seeds* numerous, naked.

LOXONIA.

Calyx 5-partitus. *Corolla* infundibuliformis, limbo quinquefido bilabiato. *Stamina* quatuor fertilia, corollâ breviora. *Stigma* bilobum. *Capsula*? ovata, calyce inclusa, bilocularis, polysperma; dissepimenti contrarii lobis revolutis seminiferis. *Semina* nuda.

Foliis oppositis altero nano, plerumque inæquilateralibus, floribus racemosis.

1. LOXONIA DISCOLOR.

L. foliis supra glabris, subtus retrorsum scabris purpurascentibus, racemis simplicibus elongatis.

Found in the interior of Bencoolen.

Herbaceous. *Stem* tomentose, purple, round, somewhat flexuose, recurved. *Leaves* opposite, bifarious, the one minute and reniform, the other sub-sessile, semicordate, ovate-oblong, falcate, acuminate, four or five inches long, slightly serrated; serratures recurved, in old leaves almost obsolete, smooth, and of a very deep-green above, retrorsely scabrous and purple beneath. *Racemes* simple, from the axils of the smaller leaves drooping backwards, long, slender, unilateral, tomentose, purple; *pedicels* short, alternate. *Calyx* five-parted, covered with red hairs; *segments* erect, acute. *Corolla* smooth, of a delicate yellowish-green colour, streaked on the inside with purple lines, much longer than the calyx, bilabiate; lower lip three-lobed; upper two-lobed; lobes shallow; faux furnished with two perpendicular

lar villous lines from the incisions of the lower lip; a villous ring within the tube immediately below the insertion of the stamina. *Stamina* four, all fertile, didynamous, shorter than the corolla; the opposite anthers connected together. *Style* one. *Stigma* two-lobed. *Capsule*? inclosed in the persistent calyx, ovate, two-celled; cells divided by the revolute lobes of the dissepiments. *Seeds* naked, roundish, foveolate.

OBS. The parietes of the capsule are very thin, and I have not yet been able to observe exactly their dehiscence.

2. LOXONIA HIRSUTA.

L. hirsuta, foliis semiovatis latis, pedunculis 2—4-fidis, floribus racemosis.

Native of Sumatra, interior of Bencoolen.

Stem recurving, somewhat flexuose, hirsute. *Leaves* opposite, sub-bifarious, very short-petioled; the one small and semi-cordate, the other semi-ovate, broad, acuminate, slightly serrated, rugose, hirsute on both sides; about five inches long and two or two and a half broad. *Peduncles* from the axils of the small leaves, looking backwards, dividing into from two to four unilateral racemes, shorter than the leaves. *Calyx* five-parted. *Corolla* bilabiate, five-lobed. *Stamina* four fertile, didynamous. *Anthers* with transverse lobes. *Style* simple. *Stigma* obtusely two-lobed. *Ovary* two-celled, polysporous, the lobes of the dissepiments revolute and seed-bearing.

ÆSCHYNANTHUS.

Calyx ventricosus-tubulosus, 5-fidus. *Corolla* limbo subirregulari. *Stamina* 4 antherifera, exserta, sæpius rudimento quinti. *Capsula* longissima, siliquæformis, bivalvis, pseudo-4-ocularis, seminibus numerosis (aristatis).

Suffrutices debiles, foliis carnosis, floribus coccineis.

The capsules of this genus nearly resemble those of *Didymocarpus*, and exhibit with great distinctness the peculiar character of this family. The seeds are attached to the whole of the inner surface of the lobes, and are singular in being awned. The exserted stamens and crimson flowers are further deviations from the usual habit of its congeners.

1. ÆSCHINANTHUS VOLUBILIS.

A. caule volubili, calycibus glabris.

Found in the neighbourhood of Bencoolen.

Stem suffruticose, weak and twining, round, smooth. *Leaves* opposite, petiolate, oval, acute at both ends, very entire, very smooth, rather fleshy; nerves indistinct; two or two inches and a half long. *Petioles* downy on the edges. *Stipules* none. *Peduncles* axillary, two-flowered; *pedicels* longer than the peduncle. *Bracts* two, opposite, large, ovate. The axil is sometimes occupied by a flower-bearing branchlet, which has the appearance of a many-flowered peduncle. *Calyx* tubular, somewhat campanulate, smooth, five-cleft at the mouth, persistent. *Corolla* of a crimson colour, longer than the calyx, sub-ringent; *tube* curved; upper lip erect, two-lobed; segments small and approximate; lower three-parted, segments larger and reflexed. *Stamina* five, of which four are fertile and exserted, the middle one sterile; the fertile stamens are at first connected by their anthers, but

but afterwards diverge from each other. *Ovary* surrounded by a fleshy nectarial ring, which is marked with five lobes. *Style* nearly as long as the stamina. *Stigma* sub-bilabiate. *Capsule* silique-shaped, eight to ten inches long, two-valved, two-celled; *cells* bipartite by the revolute lobes of the septa; *dissepiments* composed of two laminae easily separable. *Seeds* very numerous, attached to the inner surface and edge of the lobes, small, oblong, furnished with a long thread or awn at each end, and having a rounded apophysis above.

2. *ÆSCHYNANTHUS RADICANS.*

A. caule radicante, calycibus villosis.

Simbar burong. *Malay.*

Found in the forests of the interior of Sumatra growing on the trunks of old trees, with its root sometimes on the ground, sometimes on the tree.

Branches long and slender, radicating at the joints. *Leaves* opposite, short-petioled, varying from ovate to elliptic-lanceolate, sometimes almost cordate at the base, acute, very entire, the margins somewhat reflexed, villous, thick, fleshy and veinless, whitish, and finely punctate with depressed dots beneath; from one to two inches long. The old leaves become quite smooth, particularly on the upper surface. *Peduncles* axillary, sometimes also terminal, generally two-flowered, villous. *Flowers* drooping, of a deep crimson colour. *Bracts* two, at the base of the pedicels. *Calyx* tubular, villous; mouth quinquefid. *Corolla* more than twice as long as the calyx, villous without; tube gibbous at the base, contracted opposite the middle of the calyx; infundibuliform above and somewhat curved; limb subringent; upper lip erect, two-lobed; segments small and approximate, lower three-parted. *Stamina* four, exsert;

sert; *anthers* two-celled, each pair united by their apices; there is no rudiment of a fifth stamen. *Style* a little longer than the stamina. *Stigma* thick, somewhat funnel-shaped. *Capsule* pedicellate, about eighteen inches long, cylindrical, two-valved, two-celled, cells bipartite by the revolute lobes of the septa. *Seeds* very numerous, aristate at both ends, precisely as in the preceding species.

EXPLANATION OF THE FIGURES IN TAB. II.

Fig. 1. *Cyrtandra macrophylla*.

- a. The calyx.
 - b. The flower.
 - c. The corolla cut open, showing the stamina.
 - d. A fertile stamen separate.
 - e. The pistil with its nectarial ring.
 - f. The fruit.
 - g. A transverse section of the same.
- All these are of the natural size.

Fig. 2. *Didymocarpus crinita*.

- a. The calyx.
 - b. The flower.
 - c. The corolla cut open, showing the stamina.
 - d. A fertile stamen.
 - e. The pistil with its nectarial ring.
 - f. A transverse section of the capsule.
 - g. The capsule.
- All these are of the natural size.
- h. A transverse section of the capsule magnified.
 - i. One of the dissepiments with its revolute lobes, showing the manner in which the seeds are inserted in their margin, magnified.

Fig.

